With the author's compliments.

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REA'S "BRITISH BASIDIOMYCETÆ."

British Basidiomycetæ: A Handbook to the larger British Fungi. By Carleton Rea. (Published under the auspices of the British Mycological Society.) Pp. xii+799. (Cambridge: At the University Press, 1922.) 30*s*. net.

EVERY mycologist will welcome the appearance of this volume, which is issued under the auspices of the British Mycological Society and represents thirty years of careful and continuous field-work on the part of its author. The author, whose skill in distinguishing our fleshy agarics one from another has been freely placed at the disposal of so many students of fungi in this country, is to be congratulated heartily upon having crowned his life's labours with the publication of a work at once so comprehensive and so valuable for reference.

Massee's "British Fungus-Flora" appeared in the years 1892–1895. In the interval some hundreds of Basidiomycetæ, either new or new to Britain, have been discovered in this country—many of them by Mr. Rea himself—and descriptions of all these species are included in the present volume. In accuracy of description the book is an immense advance on anything previously produced in Britain.

There are a number of commendable features in the work: (1) Every species is numbered, Rea's last number being 2546; (2) the species actually seen are indicated by the letters *v.v.* (*vidi vivum*); (3) in the description of species the essential characters are placed

in italics; and (4) the derivation and meaning of the name of each genus and species is given, philology thus illuminating mycology.

The classification adopted is based chiefly on the well-considered system set forth by Patouillard in his "Essai taxonomique" (1900), and it therefore differs in many important features from that of Massee, which was based on the work of Fries. It is new to British mycologists, and will doubtless puzzle somewhat many of the older workers; but it represents an important attempt to incorporate in a systematic treatise the anatomical and microscopical data which various investigators have brought to light during the last half-century.

In the classification adopted by Fries, Berkeley, Massee, and others, the main divisions of the Agaricineæ were based on spore-colour. We were thus at the outset provided with Leucosporæ, Rhodosporæ, Ochrosporæ, Porphyosporæ, and Melanosporæ; but in the present volume these groups have disappeared and spore-colour has become a character of relatively minor importance. In Rea's classification, the Agaricales are divided into (1) the Agaricineæ, containing the bulk of the lamellate fungi in one sub-order Agaricaceæ; (2) the Cantharellineæ; and (3) the Boletineæ, the last named including Paxillus and Boletus. The divisions of the Agaricaceæ are based first on the nature of the receptacle, then on the presence or absence of a ring, etc.; and it is only the final distinctions, separating the genera from one another, which for the most part are based on spore-colour. No doubt this new classification has its advantages; but some of its defects are sufficiently

obvious. Thus, while Anellaria differs from Panæolus in little more than the possession of a membranous, often fugacious, ring, we find that Anellaria is placed close to Lepiota and Panæolus close to Collybia. For Fries, the genus Panæolus included the species subsequently placed by Karsten in Anellaria. The reviewer cannot but feel with Fries that the species of Panæolus and Anellaria are closely related to one another and that these genera should not be so widely separated.

The writer is inclined to doubt whether spore-colour is only of such minor importance as is now supposed. There is every reason to believe that the genus Coprinus, with its parallel- or subparallel-sided gills and the ripening and discharge of its spores from below upwards on each gill, followed by autodigestion of the gills from below upwards, is monophyletic. Now the spores in this genus are all black or blackish fuscous. In it there are no species with white spores or spores that are pink, purple, ochraceous, or ferruginous. Yet in the genus there are species with rings, *e.g. Coprinus comatus*, and without rings, *e.g. C. picaceus* ; species with fairly thick flesh, *e.g. C. atramentarius*, and species with membranous flesh, *e.g. C. plicatilis* ; species with dimorphic basidia and species with quadrimorphic basidia ; species with large and numerous cystidia and species without cystidia ; species which live exclusively on dung and species which live exclusively on wood, etc. ; yet, while the genus Coprinus was evolving, the colour of its spores remained constant. It is evident that, in the genus Coprinus, spore-colour is a more fundamental character than ring-formation. If this is so with Coprinus, it may well be the same with other genera of Agaricineæ.

Rea's system of classification, although in some of its details it does not satisfy the writer, has the advantage that it will stir up thought and thus make for further progress.

"British Basidiomycetæ" is distinctly Mr. Rea's own book; and, in writing it, he has adopted as regards species a somewhat conservative and independent attitude. Thus he includes descriptions of certain species which are now known to be identical with others —*e.g. Coprinus oblectus*, which is undoubtedly identical with *C. sterquilinus*, and *Coprinus radians*, which is generally considered as identical with *C. domesticus*. His independence is further shown by the fact that in certain groups he has adopted his own views rather than those of his fellow-workers in this country. Thus, in treating of the Clavariæ, he has not followed entirely the revision of the British Clavariæ as given by Cotton; while, in some instances, in treating of the Thelephoreæ, he has accepted American views rather than those of Miss Wakefield.

The volume is indispensable to all students of fungi on both sides of the Atlantic; for it is only by a clear understanding of the first-described European species that New World plants can be correctly named. The task of describing two thousand five hundred Basidiomycetæ is no mean one; and botanists generally, as well as mycologists, are under a deep debt of gratitude to Rea, not merely for having accomplished it, but for having accomplished it so well,

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